performance. In particular, our model learns optimal responses in a two-armed bandit gambling task, and shifts its attentional allocation to higher-valued stimuli, a result that mirrors our empirical data. Taken together, our EEG and modeling data suggest one possible mechanism through which attention shifts with learning.

C125

SHAME AND EXCULPATION: INTEGRATING MODELING AND NEUROIMAGING APPROACHES TO SOCIAL EMOTIONS Ming Hsu[1], Daniel Walsh[1], Taisuke Imai[2], Takeshi Murooka[1], Masataka Watanabe[3]; [1]University of California, Berkeley, [2]California Institute of Technology, [3]University of Tokyo — Imagine just winning the lottery. How much would you give to friends and acquaintances? Would your choice be different if no one knew you had just won? For many people, choices depend upon not only the material outcomes involved, but also on the beliefs and expectations of other people. Violation of these social expectations may result in negative emotions such as shame. Here we study behavior and neural responses to such expectations in the context of a simple economic game—the stochastic dictator game. In the game, a dictator chooses to allocate money between herself and an anonymous recipient while the pot of money available varies across rounds. Crucially, whereas the dictator always knows the pot size, the recipient can find out only with some probability. Behaviorally, we found that dictators gave more to the recipient when there was a greater likelihood of the recipient finding out the true pot size. In addition, subjects indicated a preference to hide the pot size from the recipient when it was large, but to reveal when the pot size was small. Using a model-based approach, we characterized subjects' preferences as a weighted combination of material payoffs, payoff inequity, and the risk of being shamed. Functional neuroimaging showed that shame risk was negatively correlated with activity in the medial prefrontal cortex, whereas the relief of shame was positively correlated with activity in the striatum. Taken together, these results shed light on the cognitive processes underlying higher-order emotions, as well as their neural substrates.

C126

THE NEURAL MECHANISMS OF SEQUENTIAL DECISION-MAKING AS REVEALED BY ALPHA-BAND OSCILLATIONS Shen-Mou Hsu[1]; [1]National Chengchi University, Taipei, Taiwan (R.O.C.) — Great progress has been made in characterizing the neural mechanisms underlying decision-making on single percepts. By contrast, much less is known about how decisions on current percepts are affected by preceding material. The current study recorded magnetoencephalographic signals while participants performed a binary categorization task on a sequence of facial expressions. The expressions were continua of morphs from fear to neutral. To probe decision-related neural signatures, I contrasted neural activity of the trials in which the ambiguous expressions were reported as fear with the trials in which the same ambiguous expressions were reported as neutral. The analysis showed that both oscillatory alpha activation at the parieto-occipital sites and beta activation at the left frontal sites reflected perceptual decisions. Nevertheless, only alpha-band oscillations were found to be closely correlated with the sequential effects revealed in the behavioural results, in which current ambiguous morphs would be more likely to be categorized as fear if immediately preceded by nearby fearful morphs as compared to if preceded by fearful prototypes. This study thus suggests that preceding stimuli may act on oscillatory alpha activity of the current percepts and in turn influence final categorical decisions, whereas oscillatory beta activity may simply represent general decision-making processes.

C127

NEURAL CORRELATES OF THE DECOY EFFECT IN DECISIONS Jianping Hu[1], Shuangju Zhen[1], Yanzhen Zhang[1,2], Wei Zhang[1]; [1]Department of Psychology,South China Normal University, [2]Shantou University Medical College — Human choices are remarkably susceptible to the context in which options are presented. The so called "decoy effect" represents a striking violation of the proposition that human decisions are "context-invariant", although its underlying neural mechanisms is not well understood. To elucidate its neural basis, we used a novel gambling task in conjunction with functional magnetic resonance imaging. Participants were more likely to choose 'target' options whose subjective values were boosted by corresponding decoy options. In the stimulus presentation phase, our data revealed that inferior parietal gyrus was more active when no decoy was presented than when decoy option was shown, whereas the occipital gyrus was more activated by decoy option trials, suggesting that the parietal based deliberation process is switched to the intuition process which may involve the occipital gyrus, when decoy option is available. In the response phase, the left anterior insula was more active when decoy boosted targets rather than decoy irrelevant competitors were chosen. Moreover, across individuals, activity in anterior cingulate cortex predicted a reduced susceptibility to the decoy effect, suggesting that resisting decoy effect requires extra cognitive control. Our findings highlight the power of decoy effect in laboratory settings and document its neural mechanisms of decoy effect.

C128

IMPORTANCE OF NUMERIC INFORMATION PROCESSING FOR THE VALUATION OF MONETARY REWARDS Frank Kanayet[1], John Opfer[1], Wil Cunningham[1,2], Per Sederberg[1]; [1]The Ohio State University, [2]University of Toronto — Processing monetary rewards has been linked to activity in OFC, striatum, and IPS (Kable & Glimcher, 2009), though the roles of each area are still not well understood. One possibility is that interpreting the value of money requires two distinct cortical systems: one for processing the subjective value of stimuli (OFC and striatum) and another for processing the meaning of numbers (IPS). To test this hypothesis, we manipulated the numeric magnitude, currency and valence to construct a range of economic rewards (e.g., +$1, +100¢, -$1, -100¢) received by participants after a simple decision. Consistent with our hypothesis, BOLD activity in IPS was related to changes in numeric magnitude, independent of the objective monetary value, whereas activity in OFC, insula and striatum were associated with objective monetary value, independent of numeric magnitude. Finally, by using representation similarity analysis, we found that the information represented in IPS was more consistent with the expected patterns associated with processing numeric magnitude, whereas activity in OFC was more consistent with patterns of information expected for monetary value. Together, these findings show the importance of considering the cognitive properties of numeric information processing for understanding how the brain processes monetary rewards.

C129

MOTOR COSTS MODULATE PRIMARY MOTOR CORTEX EXCITABILITY Aysha Keisler[1], Samantha Frank[1], Eric Wassermann[1]; [1]National Institutes of Health — Evaluation of costs and rewards is critical for identifying optimal behaviors. Recent research shows that dopaminergic cortico-striatal circuitry plays a significant role process. However, while much progress has been made elucidating the subcortical components of this network, we know little about the cortical component. Here, we examined how motor costs affect cortical excitability using transcranial magnetic stimulation. Participants completed a visual discrimination task. To manipulate motor costs, participants were required to make either a low-effort or a high-effort motor movement with the left hand when responding on the discrimination task. Accuracy feedback was given on some trials and not on others. Stimulation was applied to the left primary motor cortex shortly either (a) before the response or (b) after reward onset. Motor evoked potentials were recorded from the right hand. We found that accuracy feedback plays a critical role in the modulation of cortical excitability. When participants received feedback on their performance, excitability increased with motor costs; importantly, however, the same motor movements do not affect excitability when they are not associated with the visual task. Interestingly, effort did not affect excitability in the absence of feedback. These data suggest that feedback triggers a state of effort sensitivity in the motor cortex.

C130

YOU WILL LIKE IT AS MUCH AS IT HURTS : INTERPLAY OF STRIATUM AND DACC DURING CHOICE-MAKING Hye-young Kim[1], Yeonsoon Shin[1], Sanghoon Han[1]; [1]Yonsei University, Seoul, Korea — Although post-choice attitude change phenomenon is relatively well-known, few studies identified the actual neural mechanism of dissonance-induced attitude change, especially focusing on the act of choosing. In an fMRI study, 15 participants were scanned while performing a multiple-alternatives-forced-choice task. Participants first rated attractiveness on various art posters, and 4 different choice sets were configured based on each individual's rating (3 large sets with 4 alternatives and 1 small set with 2 alter-